

FHWA-IL-EA

Illinois Route 5 (FAP 595)
John Deere Road
16th Street to 70th Street
Moline, Rock Island County, Illinois

ENVIRONMENTAL ASSESSMENT

Submitted Pursuant to 42 USC 4332(2) (c)
By the

U.S. Department of Transportation
Federal Highway Administration
And
Illinois Department of Transportation

For IDOT

For FHWA

Date of Approval

Date of Approval

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Abstract:

The recommended action is to upgrade IL 5 (John Deere Road) from 16th Street to 70th Street, from a four-lane expressway to a six-lane expressway with a rural cross section, with a connector road over IL 5 from Coaltown Road to 38th Street. The 27th Street and Interstate 74 bridges will be replaced. A Right In/Right Out connection to IL 5 will be provided just east of the funeral home entrance on 38th Avenue and 38th Avenue will be shifted north. No access to eastbound IL 5 will be provided at this location. To improve traffic flow into the Rock River Shopping Plaza, the access drive at 41st Street will be relocated to the south to 44th Avenue. The relocated frontage road will be connected to the Rock River Shopping Plaza internal roadway network. Primary impacts of this alternative include displacement of 5 residences and 2 additional outbuildings, filling 2.23 acres of wetlands, removal of 290 trees, and filling 8.1 acres within the 100-yr floodplain.

1.1 PURPOSE OF THE PROJECT

The purpose of the IL 5 (John Deere Road) project is to reduce congestion and improve safety on IL 5 between 16th and 70th Streets in Moline. Figure 1-1 shows the project area in relation to the Quad Cities Metropolitan Area. Figure 1-2 shows the project location. In addition to being the primary connector to Interstate 74 in the Moline area, IL 5 is the major retail commercial corridor in the Illinois portion of the Quad Cities.

IL 5 currently serves multiple and sometimes conflicting functions, including:

- A connection from Interstate 80 to Rock Island (desires uninterrupted high speed)
- A route to a specific retail location
- Cruising the retail corridor (low speed, frequent stops)
- Community access to Interstate 74

1.2 HISTORY OF THE PROJECT

IL 5 was constructed as a four-lane, divided highway in the early 1970s in conjunction with the construction of Interstate 74 through Moline. The roadway extends from US 67 in Rock Island to the interchange of Interstates 80 and 88 east of the Quad Cities. Residential subdivision development south of IL 5 began in this same period. The right-of-way along IL 5 was purchased with restricted access that included access breaks at intersecting side roads. IL 5 includes at-grade intersections controlled by traffic signals at 38th Street, 41st Street, 53rd Street, 60th Street, and 70th Street which provide north-south access to the City of Moline and areas northeast of the Quad Cities. IL 5 traverses 27th Street with a bridge with full access control. Local east-west streets that parallel IL 5 include 36th Avenue/38th Avenue (locally called Coaltown Road) which acts as frontage road just north of IL 5 and 23rd Avenue further to the north. The office/retail center of Moline shifted from downtown to IL 5 in the 1990s, mirroring development patterns seen throughout Illinois during this period. IL 5 grew to be the major retail commercial corridor and almost all east-west access in the area north of the Rock River is now provided by IL 5. A retail mall is located just south of IL 5 between 16th Street and 27th Street. The Rock River Shopping Plaza includes several large retail businesses and restaurants and is located just south of IL 5 between 38th Street and 41st Street.

Additional improvements that have been completed on IL 5 within the project area include:

- Exclusive right-turn lane added on IL 5 at 38th Street for westbound traffic (1986).
- Dual left-turn lanes added on IL 5 at 16th Street for westbound traffic and a third lane added to IL 5 from 16th Street to Interstate 74 in each direction (1988).
- Exclusive right-turn lane added on IL 5 at 60th Street for eastbound traffic (1989).

- Eastbound right-turn lane storage lengths increased at 38th Street and 41st Street and westbound left-turn lane storage length increased at 41st Street (1999).
- Dual left-turn lanes added on IL 5 at 41st Street for eastbound traffic (2000).
- Left-turn lanes extended on IL 5 at 38th Street for eastbound and westbound traffic (2004).
- Acceleration lane added on IL 5 for southbound traffic turning right onto IL 5 westbound at 60th Street (2004).
- Traffic signal timing, phasing and progression adjustments at each intersection of IL 5 from 16th Street to 70th Street (2004).

1.3 NEED FOR PROJECT

1.3.1 System Linkage

IL 5 is classified as a major principal arterial. It serves as the primary connection between Interstate 80 east of the Quad Cities and Interstate 74, which traverses north-south on the western side of the project corridor. In most areas, the highway includes a four-lane section with a center median. Six traffic lanes are provided from 16th Street to Interstate 74. However, the extra lanes through this section serve primarily as extended ramps for the Interstate, which can cause driver confusion and traffic conflicts at their termini. IL 5 connects to US 67 in Rock Island, west of the project area.

1.3.2 Traffic Operations/Capacity

Because many types of vehicle trips are highly dependent on IL 5 and intersections are closely spaced, there is a high level of intersection congestion and delay. Since there are no alternative east-west arterial routes in this area, almost all traffic traveling east or west within the corridor uses IL 5 for these trips. Many of the north-south streets that intersect with John Deere also have signalized and unsignalized intersections within close proximity to IL 5. The spacing of these intersections is insufficient to accommodate back-to-back left turns, further exacerbating congestion and compromising safety.

The capacity to accommodate current and future traffic volumes is one indication of the need for highway improvements. This can be determined by analyzing relationships between the highway's average daily traffic (ADT) and design hourly volume (DHV) and the roadway's physical characteristics for current and future years. The ADT consists of the total traffic volume passing a point on a highway on an average day. The DHV is the estimated traffic volume for a selected peak hour.

The overall effect of the combination of traffic and roadway characteristics is expressed as “level of service (LOS)”, which is a qualitative measure of vehicle operational conditions in a traffic stream. By definition, LOS is evaluated on a scale from A to F, with A designating free-flow operating conditions and F designating flow breakdown. For new highway construction or reconstruction, IDOT considers LOS B to be acceptable in rural areas, and LOS C to be acceptable in urban areas such as the project area.

The 2008 ADT on IL 5 varies from 25,990 to 44,175 as shown on Figure 1-3. The projected 2013 ADT for IL 5 within the project limits varies between 28,000 and 47,600 vehicles per day. Traffic volumes are expected to increase to 37,750 to 64,100 vehicles per day within a 20-year timeframe. Capacity analyses were conducted for the mainline roadway and intersections using the 20-year projected traffic volumes (2033). Given the additional traffic volume expected by 2033, all of IL 5 within the project area is expected to function at LOS E or F if no improvements are undertaken with the exception of the 70th Street intersection, which will function at a LOS C. This is primarily due to 70th Street being located beyond the main commercial area in a more rural/undeveloped area and subsequently, the traffic volumes at the intersection are much lower than those of the other intersections to the west.

The signalized intersections on IL 5 within the corridor currently operate at or near capacity. The capacity deficiencies at these intersections are primarily due to an insufficient number of through lanes and dedicated turn lanes.

1.3.3 Safety

The 3.2-mile corridor of IL 5 currently has a posted speed of 55 mph, and contains 6 intersections, 4 within a 1½-mile section. It also includes the Interstate 74 cloverleaf interchange which includes ramps, auxiliary lanes and tapers. Stop-and-go movements from the signals, in conjunction with large ADT values, account for frequent accidents.

The Illinois Department of Transportation has developed a system for identifying High Accident Locations (HALs) based on a comparison of the number of accidents occurring at a specific location with the Critical Frequency of accidents, the Critical Rate of accidents, and the Equivalent Property Damage Only (EPDO) type accidents. These Critical Values are based upon Statewide Crash Statistics for accidents occurring during three-year periods and are established for all types of locations and types of streets or highways, both in urban and rural settings. No intersections or roadway segments of IL 5 within the project study area are currently designated as High Accident Locations.

A project crash analysis was completed based on raw accident data for 2005 through 2007. The crash analysis included analysis of accidents at the intersections of IL 5 with 16th, 38th, 41st, 53rd, 60th and 70th Streets. Accidents that occurred in segments between intersections were also evaluated.

During the study period of 2005-2007, 516 accidents, with 175 injuries and no fatalities, were reported within the crash analysis limits. One hundred thirty-one (131) of the 516 crashes occurred at night, 75 occurred during wet pavement conditions and 20 occurred during snowy/icy pavement conditions. Three hundred thirty-two (332) of the 516 crashes were rear-end collisions (64.3%), 105 (20.4%) of the crashes were angle or left turn collisions, 42 (8.1%) of the crashes were sideswipe collisions and 37 (7.2%) of the crashes were other collision types. The large number of crashes on this section of IL 5 is attributed to existing high traffic levels and inadequate intersection capacities.

Of the 516 crashes that occurred in this section of roadway during the 3-year study period, 318 (61.6%) occurred at intersections and 198 (38.4%) occurred in nonintersection locations. Of the 198 non-intersection crashes, 121 (61.1%) were rear-end collisions, 25 (12.6%) were sideswipe type collisions, 11 (5.6%) were hit animals, 11 (5.6%) were run-off-road crashes and 30 (15.2%) were other types of collisions. The section related crashes resulted in 57 injuries and no fatalities. The highest number of non-intersection crashes occurred between 38th Street and 41st Street and between 41st Street and 53rd Street.

The 318 intersection related crashes included 211 (66.4%) rear end collisions, 11 (3.5%) angle collisions, 69 (21.7%) turning collisions, 17 (5.3%) sideswipe collisions, 2 (0.6%) animal collisions and 8 (2.5%) off-road crashes. Over 63% (211 of 332) of the rear end collisions and 76.2% (80 of 105) of the angle and turning collisions occurred at intersections. The highest number of intersection crashes occurred at the 38th Street and 41st Street intersections with IL 5.

The crash history, high traffic volumes and substandard LOS for the segments and intersections indicate a need for added capacity at the intersections as well as on the mainline roadway. Though the crash rates for the intersections all fall below the statewide average, the segments, with the exception of 60th to 70th Streets, all experience wet pavement crashes at a rate that is higher than the statewide average. This indicates a need for an improved roadway surface for the majority of the mainline IL 5 pavement, in addition to the need for additional capacity.

1.3.4 Transportation Demand (Consistency w/ Regional Transportation Plan)

The Bi-State Regional Commission, the metropolitan planning organization for the Quad Cities, has prepared a 2025 Quad City Area Long Range Transportation Plan that includes the project area. Widening to 6 through lanes and reconstruction of IL 5 from Interstate 74 to 70th Street is identified as a roadway network priority for the 2011 to 2025 period.

1.3.5 Modal Interrelationships

The Quad Cities are served by three rail companies, two airports, and over 30 barge terminals. The Burlington Northern Santa Fe, Iowa Interstate and I & M Rail Link rail

companies provide rail connections to markets throughout North America. According to the Bi-State Regional Commission, freight traffic has increased on all of these lines over the past several years. Passenger rail service is not provided in the Quad Cities.

Two air freight carriers currently operate out of the Quad City International Airport, which is located immediately south of the Rock River south of IL 5, approximately 2 miles south of the project area. A US Customs Port of Entry is located near the Quad Cities International Airport. The airport also provides passenger air service, including jet service. The Davenport Municipal Airport is a general aviation airport located near US 61 and Interstate 80 in Davenport.

The Mississippi River links the Quad Cities with the Gulf of Mexico, the Great Lakes, and connections to foreign ports. The navigation season lasts approximately 10 months in this area. Tonnage through Locks 14 and 15 in the Quad Cities area has generally increased since 1980.

Highways provide a critical link between these intermodal facilities. Freight, especially agricultural products, is transported from producers within Illinois and Iowa to barge terminals on the Mississippi River or rail terminals. International products are brought in by air, barge or rail and distributed through the highway network. IL 5 is a Class II truck route and lies about 3 miles south of the Mississippi River along Interstate 74. It is an important connector for the local movement of freight and people between the Quad City International Airport, railroad terminals and barge terminals. Increasing congestion and frequent stops restrict the movement of commuter and freight traffic through this area and limit accessibility to the airport for passengers.

1.3.6 Economic Retention

IL 5 provides access to the major retail center for Moline. Several large office centers, including the John Deere worldwide headquarters, are located along IL 5. IL 5 serves as the primary access for Black Hawk College and the Western Illinois University Quad Cities campus. Each of these uses is critical to the overall economy of Moline and the Quad Cities area. The economic viability of each depends upon the availability of safe, efficient highway transportation, and IL 5 is the key component of the transportation network in this area. Increasing congestion and decreasing safety on IL 5 have the potential to adversely impact the economic viability of retail, commercial and educational resources in this area.

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The project area was inventoried for environmental resources. Cultural, natural, physical, and socio-economic resources and special waste sites in the study area are identified in this section and on the environmental inventory map (Figure 2-1).

2.1 SOCIO-ECONOMIC CHARACTERISTICS

The project corridor falls within the Davenport-Moline-Rock Island Metropolitan Statistical Area (MSA). Metropolitan statistical areas are defined by the Census Bureau based on the presence of an urbanized area with a total population of at least 100,000 and adjacent communities having a high degree of economic and social integration. The MSA also includes the city of Bettendorf, Iowa and is known collectively as the Quad Cities. The 2000 Census of Population and Housing provides data for the MSA, as well as the city of Moline and census tracts within Moline. The project area includes portions of Census Tracts 211, 218, and 219. Most of the project corridor falls within Census Tract 211, which extends from Interstate 74 east to Archer Drive, east of the project corridor limits, and from 38th Avenue south to the Rock River. Black Hawk College and Western Illinois University's Quad Cities campus are included within this census tract. Only a small part of the northern portion of the project area is included in Census Tract 218. Within Census Tract 219, the project corridor includes primarily commercial areas, with very little residential development. The limits of these census areas are shown in Figure 2-2. Data for these geographic areas, plus the State of Illinois, were used to characterize the socio-economic setting of the project area.

2.1.1 Demographics

2.1.1.1 Population

The City of Moline reached a population high in 1970, but a number of economic factors contributed to a steady population decline over the following 20 years. The 1990's were a period of stabilization for the region, which has since experienced economic and population growth. Population characteristics for the census tracts that include the project corridor, City of Moline, Quad Cities MSA, and the State of Illinois are presented in Table 2-1. The population of Moline in 2000 was 43,768. Although both Moline and the MSA experienced growth from 1990 to 2000 (1.3 and 2.3 percent, respectively), it was well below the 8.0 percent population growth of the state. The population of Census Tracts 211, 218, and 219, which include the project corridor, was 10,320 in 2000, down 2 percent from 1990.

Population mobility and nativity are summarized in Table 2-2. The population in the area of the study corridor is somewhat less mobile than the city of Moline as a whole or the Quad Cities MSA, with 59 percent of the population 5 years and over living in the same house in 2000

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as 1995, compared to 56 percent of the City of Moline and 57 percent for the Quad Cities MSA. Movement of families/individuals did not change greatly between 1990 and 2000 for either the city or the MSA. Over 96 percent of the population of Census Tracts 211/218/219 is native to the United States, compared to 88 percent of the population of Illinois.

Age distribution is presented in Table 2-3. Trends in age distribution were fairly consistent for the city, MSA, and state population. All three saw a slight rise since 1990 in the percentage of the population between 25 and 59 years of age. However, Census Tracts 211/218/219 had a slightly higher proportion of working age residents in 2000 and proportionally lower school age and retirement age populations than the Quad Cities MSA or the State of Illinois.

2.1.1.2 Racial Composition

Tables 2-1 and 2-4 summarize racial distribution for Moline, the Quad Cities, the State of Illinois and Census Tracts 211/218/219 in 1990 and 2000. The percentage of minorities rose between 1990 and 2000 for the project area, City of Moline, MSA, and Illinois. The increased minority percentage in the project area is primarily attributable to increased populations of Asians, Hispanics and persons declaring "other race".

2.1.1.3 Education

School enrollment and educational attainment in 1990 and 2000 are summarized in Table 2-5. While all of the census areas reviewed experienced an increase in school enrollment, Census Tracts 211 and 219, but not 218, experienced a decline in the number of elementary and high school students, while all of the census areas reviewed experienced a decline in the number of college students. This decrease was most significant for the City of Moline, which reported a decline of almost 22 percent.

While the percent of college graduates reported in 2000 for Census Tracts 211, 218, and 219 combined was similar to city and MSA data, this percentage differs significantly between the census tracts. Census Tract 211, which includes the majority of the study corridor, Black Hawk College and the Western Illinois University Quad Cities campus, reported 26.1 percent of the population 25 years and older had a Bachelor's degree or higher, with 10.2 percent with a graduate or professional degree. In Census Tract 218, 27.6 percent of the population 25 years and older had a Bachelor's degree or higher, with 7.9 percent having a graduate or professional degree. This compares to 6.3 and 0.8 percent, respectively for Census Tract 219.

2.1.1.4 Employment and Occupation

The City of Moline and surrounding areas employ more than 30,000 people in manufacturing. There are 112 manufacturing establishments in Moline, including farm equipment, elevators and escalators, machine tools, heavy machinery, foundry equipment, metal products and more. Moline's retail base – featuring SouthPark Mall and major national retail stores along IL 5 – helps position the city as the primary retail center in the Illinois Quad Cities.

Major employers in the Quad Cities are listed in Table 2-6. The Rock Island Arsenal is the largest employer in the Quad Cities area, employing 6,680 civilians in defense manufacturing centered in Rock Island. Moline is the world headquarters for John Deere, a leading manufacturer of farm and industrial equipment and the second largest employer in the Quad Cities. It is also the North American headquarters for Kone elevators and escalators and Heart of American Inns & Restaurants. Other major regional employers include health care centers, other manufactures, food processors and utilities.

Table 2-7 summarizes employment in 2000 for Moline and the Quad Cities MSA by occupation and industry. Employment status for Census Tracts 211/218/219, the City of Moline, the Quad Cities MSA and State of Illinois in 1990 and 2000 is presented in Table 2-8. Moline had a potential labor force (population over 16 years of age) of 34,578 in 2000, of which 62.3 percent was employed. Census tracts 211/218/219 had a combined labor force of 8,234, with an unemployment rate of 5 percent. The percentage of persons in the labor force was up 2.2 percent from 1990 for the census tracts representing the project corridor, in contrast to a 7.8 percent increase for the Quad Cities MSA and a 6.7 percent increase for the State of Illinois. This statistic may reflect the large number of students attending Black Hawk College and Western Illinois University who reside in Census Tract 211.

Table 2-8 also summarizes data on commuting to work. Over 88 percent of the workers in Census Tracts 211/218/219 drive alone to work, which is similar to commuters for the City of Moline overall and the Quad Cities MSA. Use of public transportation is very limited, and has declined for both the study area and the MSA since 1990. Mean travel time to work was 17.9 minutes for Census Tract 211, 15.9 minutes for Census Tract 218, and 19.8 minutes for Census Tract 219. This is similar to a mean travel time of 19.0 minutes for the MSA and indicates that the majority of the work force residing in the project study area works outside of the project area.

2.1.1.5 Income Levels and Poverty Status

Income level and poverty status are summarized for the project area, City of Moline and Quad Cities MSA in Table 2-9. The median household income for the City of Moline and Quad Cities MSA in 2000 was \$48,207 and \$50,055 respectively. This compares to a median income of \$51,789 for Census Tract 211, \$51,364 for Census Tract 218, and \$35,673 for Census Tract 219. The 2000 median income level reflected approximately a 38 to 60 percent increase from 1990.

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Poverty level is defined by the Census Bureau based on a set of income thresholds that vary by family size and composition. The number of individuals and families below poverty level declined between 1990 and 2000 for all census areas evaluated. The census tracts in the project area had a total of 755 individuals and 148 families below poverty level in 2000. However, the percentages vary significantly between these census tracts, with Census Tract 211 having 6.2 percent of individuals and 5.4 percent of families below poverty level, Census Tract 218 having 6.2 percent of individuals and 3.5 percent of families below poverty level, while Census Tract 219 had 13.5 percent of individuals and 9.9 percent of families below poverty level. This difference is most pronounced in the 65 years and older age group, where the number of individuals in poverty was 2.5 percent for Census Tract 211, 4.9 percent for Census Tract 218, and 9.3 percent for Census Tract 219. The percentage of individuals and families below poverty level for the City of Moline and the Quad Cities MSA was 9.5 and 7.1 percent, and 10.2 and 7.6 percent respectively.

2.1.1.6 Housing Characteristics

2000 housing information for the project area, City of Moline and Quad Cities MSA is shown in Table 2-10. Census Tract 211 had 734 owner-occupied housing units, compared to 1,627 in Census Tract 218 and 452 in Census Tract 219. The median value of owner occupied housing was \$86,000 for Census Tract 211 and \$97,800 for Census Tract 218, over \$20,000 to \$30,000 higher than Census Tract 219 and above both the city of Moline and Quad Cities MSA median values. Census Tract 219 also had a low median value of owner-occupied housing compared to other census tracts in the study area, the City of Moline, and the Quad Cities MSA.

2.1.1.7 Community Characteristics

Moline is located approximately 165 miles west of Chicago and midway between Minneapolis to the north and St. Louis to the South. Over 37 million people, or almost 13 percent of the nation's population, reside within a 300-mile radius of Moline. Moline and the Quad Cities form the largest urban concentration between St. Louis and Minneapolis along the Mississippi River. Interstate highways 80, 88 and 74 provide ready access in all directions, making the region a preferred location for logistics and distribution facilities.

A community profile for Moline provided by the Illinois Department of Commerce and Economic Opportunity (2005) is shown in Table 2-11. Moline is a full service community with a fire department supporting 68 full time employees, a police department with 72 full time employees, and 6 health care facilities. The community's educational facilities span preschool through graduate universities. Educational facilities within the project area include the Katherine Butterworth Elementary School, Black Hawk College, and Western Illinois University Quad Cities Campus.

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One cemetery, Rose Lawn, is located within the project corridor just north of IL 5 and east of 60th Street.

A fire station is located within the corridor between Coaltown Road and IL 5 and two blocks east of 41st Street.

2.1.1.8 Land Use

The 2001 City of Moline Comprehensive Plan defines current and proposed land use within the study corridor. Existing land use within the project corridor is dominated by commercial and residential uses (see Figure 2-3). Nearly the entire corridor is paralleled on the north and south by commercial properties.

Large tracts of single and multiple-family residences lie to the north of 38th Avenue, north of commercial properties along IL 5. A large residential area lies north of IL 5 between 25th and 27th Streets. Other current land uses north of IL 5 include the Church of Christ south of Coaltown Road near 49th Street, and Rose Lawn Cemetery, Black Hawk College and Western Illinois University Quad Cities Campus east of 60th Street. Scattered individual residences are also present north of Coaltown Road.

Two residential areas are present south of IL 5 within the project corridor. The Heritage Addition is a subdivision comprised of single-family, primarily owner-occupied homes located between 48th and 53rd Streets and immediately south of IL 5. Butterworth Elementary School is located immediately west of this development and south of IL 5. A mobile home court is located in the southeast quadrant of the Interstate 74 interchange, immediately south of IL 5. A few isolated single-family residences are located east of this mobile home development. Between these two residential areas, the corridor is comprised of commercial, predominantly retail, development. Except for a few scattered residences along 60th Street, the land use east of 53rd Street does not include residential use.

The comprehensive plan calls for further commercial development along the project corridor, including rezoning of properties that are currently zoned residential. Figure 2-4 shows the future land use as envisioned by the 2001 Comprehensive Plan. Planned future land use includes conversion of all of the vacant land east of 60th Street to a planned unit development. Other currently vacant areas along IL 5 are shown as commercial use.

A preliminary plat has been filed with the City of Moline for a new mixed-use development to be located south of IL 5 between 60th and 70th Streets. This development will include commercial, retail and residential uses.

2.2 AGRICULTURAL CHARACTERISTICS

2.2.1 Farmland and Soils

As discussed in the preceding section, the entire project corridor is currently in developed uses.

The soil survey of Rock Island County (Rehner, 1977) describes three soil associations within the project corridor: Seaton-Coffeen-Mixed alluvial land, Raddle-Joslin, and Fayette-Sylvan-Hickory. Eleven soil series are described within these associations. However, most of the soils within the project corridor have been substantially modified by development.

The Rock Island County NRCS classifies four soils that occur within the project corridor as hydric: Sable silty clay loam, Radford silt loam, Otter silt loam, and Sawmill silty clay loam. None of the soils within the corridor is classified as highly erodible.

2.3 CULTURAL RESOURCES

The project area does not include any sites, structures or districts listed on the National Register of Historic Places (<http://www.nr.nps.gov>). The Illinois Historic Preservation Agency HARGIS database (<http://gis.hpa.state.il.us/hargis>) does not indicate any potentially significant structures or districts within the project area. The project will not impact any bridge listed on the Statewide Index of the Historic Bridge Survey.

A cultural resources survey of the project area was completed by the Illinois Transportation Archaeological Resource Program. The survey identified one archaeological site within the project area. This site was described as a non-diagnostic lithic scatter with no potential for intact subsurface deposits. The IHPA has concurred that the project will not impact any site subject to protection under Section 106 of the Historic Preservation Act of 1966, as amended. Documentation of that concurrence is included in Appendix A.

2.4 AIR QUALITY

The IL Route 5 study area is located within the Quad Cities metropolitan area and Rock Island County. The National Ambient Air Quality Standards (NAAQS), established by the U.S. Environmental Protection Agency, set maximum allowable concentration limits for six criteria air pollutants. Areas in which air pollution levels persistently exceed the NAAQS may be designated as “non-attainment”. States in which a non-attainment area is located must develop and implement a State Implementation Plan (SIP) containing policies and regulations that will

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bring about attainment of the NAAQS. All areas of Illinois are currently in attainment of the standards for four of the six criteria pollutants: carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead.

For the 8-hour Ozone Standard, Cook, DuPage, Kane Lake, McHenry and Will Counties, as well as Aux Sable and Goose Lake Township in Grundy County and Oswego Township in Kendall County, have been designated as moderate nonattainment areas. Jersey County, Madison, Monroe, and St. Clair Counties in the St. Louis Calumet area and Lyons Township in Cook County have been designated as nonattainment for the particulate matter (PM₁₀) Standards. In addition, Oglesby and several adjacent townships in LaSalle County and Granite City Township and Nameoki Township in Madison County have been designated as maintenance areas for PM₁₀ Standards. In addition, Cook, DuPage, Grundy (Goose Lake and Aux Sable Townships), Kendall (Oswego Township), Kane, Lake, Madison, McHenry, Monroe, Randolph (Baldwin Township), St. Clair and Will counties are above the PM 2.5 Standard. All other areas of Illinois are in attainment for ozone and PM₁₀ standards. No portion of this project is located within a designated non-attainment area.

2.4.1 Mobile Source Air Toxics (MSAT)

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards (NAAQS), EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries). Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the Clean Air Act. The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The EPA is the lead Federal Agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources (66 FR 17229) on March 29, 2001. This rule was issued under the authority in Section 202 of the Clean Air Act. In its rule, EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, FHWA projects that even with a 64 percent increase in VMT, these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 percent to 65 percent, and will reduce on-highway diesel PM emissions by 87 percent. As a result, EPA concluded that no further motor vehicle emissions standards or fuel standards were necessary to further control MSATs. The agency is preparing another rule under authority of CAA Section 202(l) that will address these issues and could make adjustments to the full 21 and the primary six MSATs.

2.5 NOISE

Federal and state regulations and policy establish procedures for highway traffic noise studies, noise abatement measures and abatement criteria used for planning and design of highways. 40 CFR 772 presents the “Procedures for Abatement of Highway Traffic Noise and Construction Noise”. These regulations include the Noise Abatement Criteria (NAC) which define highway traffic noise conditions (sound levels) that represent a traffic noise impact and therefore warrant consideration of abatement measures. The NAC are noise impact thresholds, and are not attenuation design criteria. The NAC are shown in Table 2-12.

Noise levels are expressed as dBA Leq. The decibel (dB) is the unit of measurement for sound. In evaluating traffic noise, the measurement of decibels is weighted to focus on the frequencies that correlate well with human response; this is referred to as “A-weighting”. The A-weighted unit of measure is abbreviated dBA. Leq is defined as the equivalent sound level, which is the steady sound level that has the same acoustic energy as the time varying sound level over the same time period. Leq(h) is the hourly value of Leq.

Existing land use within the project corridor is dominated by commercial and residential uses. Areas of potential noise impact related to the proposed improvements were identified based on current and future land uses in proximity to the project. Noise study areas or noise sensitive areas (NSAs) were identified that comprise groupings of receivers that are of similar land use, represent a common general location, and might be considered as a group if abatement appeared to be warranted.

Specific locations were selected for use in predictions of existing and projected noise levels. These locations were positioned to represent the conditions expected in the NSA, and

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may represent a single receptor or a grouping. The receiver types consist of single-family residence, multi-family residence, church, cemetery, school, and monitoring locations.

Field monitoring was conducted at selected receivers to provide a comparison to modeled noise levels, and to confirm that the noise source is predominantly highway traffic and that the model results represent valid predictions suitable for use in assessing impacts.

Traffic noise levels were modeled for the existing condition, no-build, and proposed build alternative using the Federal Highway Administration's Traffic Noise Model Version 2.5 (TNM 2.5). Data on existing and projected future traffic volumes and vehicle types were based on information provided by IDOT. Assignments of traffic control conditions were made after review of the existing and proposed conditions. Traffic speeds were input as the posted speed limit.

Existing and predicted future traffic noise levels with and without the proposed improvements are presented in Section 4.5. The results of the noise modeling indicate that some of the receivers are subjected to noise levels above the NAC under existing conditions. Results of the noise modeling are described in detail in the Noise Technical Report.

2.6 NATURAL RESOURCES

2.6.1 Geology

The project area is located in the Galesburg Plain subsection of the Till Plains section of the Central Lowland Physiographic Province (see Figure 2-6). The Galesburg Plain includes the western segment of the Illinoian drift sheet (see Figure 2-7). The till plain is level to undulatory with a few morainic ridges and is in a late youthful stage of erosion. Larger stream valleys are steep-walled, alluviated and terraced (Leighton, et al., 1948). Since the last glaciation, surface topography has been primarily influenced by stream erosion and floodplain deposition (Rehner, 1977).

Surface topography along the project corridor consists of level to gently sloping areas south of the roadway and gently to steeply sloping hills to the north of the roadway. Relief in the project area ranges from elevation 570 to 650 msl.

The project corridor does not contain any economically important geologic resources.

2.6.2 Surface Geology

Thickness of the unconsolidated or non-lithified drift deposits in Rock Island County range from zero where the bedrock is exposed at the surface to 200 feet. Surficial deposits within the project corridor include Cahokia Alluvium along the slopes on the northern side of the corridor and Peoria loess and Roxana silt along the nearly level area on the southern side of the corridor.

2.6.3 Natural Resources

Natural resources within the corridor are shown in Figure 2-1. A large portion of the land within the project corridor is in commercial or residential land use. Some row-cropped agricultural land is present on the south side of IL 5 on the eastern end of the project corridor. These types of land uses provide limited, low-quality habitat for most terrestrial plants and animals. Relatively undisturbed areas are minimal and consist of isolated patches of upland and wetland habitats interspersed with developed areas and row crops. Habitat generalists which are tolerant of frequent disturbance commonly occur in these types of areas. Aquatic resources are very limited and have been highly modified through agricultural practices and commercial development; these resources provide little quality habitat for most aquatic organisms.

Twenty-one state and federally listed threatened and endangered species have been recorded for Rock Island County (Herkert and Ebinger, 2002) (Herkert, 1992). There are no known occurrences of any of these listed species or any known habitat for any of these species within the project corridor. The project corridor does not include any natural areas or dedicated nature preserves.

The Illinois Department of Natural Resources reviewed the project Endangered Species Consultation Program Agency Action Report for the project and terminated consultation on January 23, 2002 (see Appendix A). This will be renewed prior to project construction. The IDOT Bureau of Design and Environment reviewed the biological resources on May 1, 2003 and determined that no further coordination is required (see Appendix A).

2.7 WATER RESOURCES AND QUALITY

2.7.1 Groundwater

The Illinois State Geological Survey (ISGS) has recorded four private user wells within two hundred feet of IL 5, all on the south side of the road. Wells in the project area are limited to

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private wells for domestic use. Well records include one well east of 16th Street, two wells east of 41st Street, and one well east of 53rd Street. Water is obtained from limestone at depths ranging from thirty to 335 feet below the surface. There may be other private user wells within two hundred feet of the roadway that are not recorded in the ISGS database. However, it is unlikely that any of these wells are currently in use for potable supply. Within the city limits, potable water is supplied by the City of Moline from the Mississippi River and use of private wells for potable supply is prohibited.

The potential for stratigraphic sequences to prevent contamination of groundwater resources by surface and near surface waste disposal and spills has been estimated for all areas of Illinois (Berg et al., 1984). Aquifers are best protected from contamination where uniform, relatively impermeable, silty or clayey tills greater than 20 feet thick blanket relatively impermeable bedrock. The project corridor is located in Zone AX, which is described as a mixture of varying composition and thickness of gravel, sand, silt and clay along streams. Zone AX is a subset of Zone A: Zone A has the highest potential for groundwater contamination.

According to the USEPA's list of designated sole-source aquifers (May 1997 draft), there are no sole-source aquifers in Illinois.

2.7.2 Surface Water Resources

The project corridor falls within the Rock River drainage basin (USGS Hydrologic Unit 07090005). Surface drainage flows overland and via ditches and unnamed tributaries to the Rock River, which is located approximately 3,000 to 6,000 feet south of IL 5.

Surface water resources within the project corridor are limited to three small, unnamed tributaries of the Rock River. Stream 1 originates north of 36th Avenue and has been diverted to a ditch running along the east side of 16th Street. Stream 2 crosses the project corridor approximately 850 feet east of 41st Street. This channelized stream is approximately 6 to 10 feet wide, and was approximately 1 foot deep and was free of sediment in April 2003. The stream is entrenched approximately 3 to 4.5 feet with steep banks. Stream 3 crosses IL 5 1,900 feet east of 60th Street. This channelized stream is 6 to 10 feet wide, with steeply sloping banks approximately 8 to 12 feet high. Small trees and shrubs are present on the bank slopes and in a very narrow band along the top of the ditch. All of these drainageways are highly modified and provide little aquatic habitat.

2.7.3 Surface Water Quality

Water quality is affected by a number of factors including watershed land use, chemical composition of surface soils and exposed bedrocks, composition of vegetation, concentrations of atmospheric pollutants, and point and non-point source pollution. Most of the IL 5 project corridor is highly developed, with commercial and residential development along both sides of

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the highway throughout most of the project length. Some row-cropped agricultural land is present on the south side of the highway east of 60th Street. Because of the prominent commercial use, a large portion of the project corridor is covered in impermeable materials making up buildings, roads, and parking lots. Residential areas include green space for lawns, which provide limited infiltration and retardation of stormwater flows. Non-point runoff from these sources may contribute sediments, nutrients and pesticides to receiving streams.

The Illinois Environmental Protection Agency (IEPA) has not completed a designated use assessment for any of the surface waters in the project corridor. The streams within the corridor are classified as intermittent drainages and are tributaries of the Rock River. The 16-mile segment of the Rock River that includes the confluence with the drainage from the project area has designated uses of aquatic life and fish consumption. In 2008, the Illinois Environmental Protection Agency classified this segment as not meeting these designated uses based on data collected through 2006. Potential causes of impairment included mercury and PCBs due to atmospheric deposition (IEPA, 2008). This segment of the Rock River was rated “C” or moderate aquatic resource (Bertrand et al., 1996) or “not rated” in the Biologically Significant Streams of Illinois (Page et al., 1992).

One of the primary contaminants of concern for highway construction projects is chloride. Sodium chloride is applied to roadways for pavement deicing. However, chloride ions are very soluble in water and may be present in storm water runoff. No current data are available for existing chloride concentrations in streams within the corridor or the Rock River at Moline.

2.8 FLOOD PLAINS

The Federal Emergency Management Agency (FEMA) has mapped flood plains within the project corridor (see Figure 2-1). The area immediately north and south of IL 5, between 16th Street and the Interstate 74 interchange, is mapped as Zone A (100-year floodplain). A 1,400 foot section of IL 5 east of the Interstate 74 interchange is also mapped within Zone A. However, this section of roadway did not flood during the record high floods of 1993. Therefore, it is believed that the FEMA map overestimates the extent of the flood hazard area in this location. The flood plain within the project corridor functions primarily for flood desynchronization and erosion control; given the highly developed nature of the corridor, these flood plains do not provide significant wildlife habitat.

2.9 WETLANDS

The Illinois Natural History Survey conducted wetland surveys for the project corridor on April 14-15, 2003 and January 12, 2005. The survey included all potential wetland areas shown on the National Wetland Inventory and potential wetland areas identified in the field based on

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vegetation. Wetlands identified within the corridor are shown on Figure 2-1. Characteristics of these wetlands are summarized in Table 2-13. A floristic quality index (FQI) (Taft et al, 1997) was calculated for each of the wetlands identified. FQIs for these sites ranged from poor to moderate. The indices calculated from these surveys may underestimate floristic quality because of the timing of the surveys; however, none of these wetlands is expected to exhibit high floristic diversity in any season.

The wetlands within the corridor generally represent small remnants of a larger wetland complex that has been filled and fragmented by development. Although these areas generally function to reduce the rate of stormwater runoff and reduce sediment loads, their functions are limited by their small size.

The project must comply with Federal requirements to avoid or minimize the loss of wetlands, and must also comply with the State Interagency Wetland Policy Act of 1989 (IWPA), which is administered by the Illinois Department of Natural Resources (IDNR). Representatives of IDNR reviewed wetlands within the project corridor on November 30, 2004. Table 2-13 notes their conclusions regarding IWPA jurisdiction.

Wetlands that have an apparent surface connection to Waters of the United States fall under the jurisdiction of Section 404 of the Clean Water Act. Impacts to these wetlands are regulated by the U.S. Army Corps of Engineers (COE).

2.10 SPECIAL WASTE

A Preliminary Environmental Site Assessment (PESA) for special waste was conducted by the Illinois State Geological Survey in May 2002. The details of the assessment can be found in ISGS Report #1350. The full report is available at the IDOT Region Two, District Two office in Dixon. See Section 4.11 for a discussion of the results of the assessment.

2.11 SPECIAL LANDS

2.11.1 Section 6(f) Properties

The project corridor does not include any lands that have been purchased or developed using Land and Water Conservation funds (LAWCON) or Opens Space Land Acquisition funds (OSLAD).

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2.11.2 Section 4(f) Properties

The project corridor does not include any publicly owned recreational land or historic sites (4(f) properties).

3.1 ALTERNATIVES CONSIDERED

Several alternatives were considered to address the project purpose and need described in Section 1. These alternatives include: transportation demand strategies, using other modes of transportation, the no-build alternative, and construction alternatives. These alternatives are discussed below.

3.2 TRANSPORTATION DEMAND STRATEGIES

Transportation Demand Strategies (TDS) are actions aimed at reducing the demand for existing transportation systems. The benefits of successful TDS include decreased congestion, reduced emissions, reduced fuel consumption, decreased traffic accidents, improved public health and fitness, and more affordable transportation options. Some of these strategies include ride pooling, mass transit, park and ride facilities, shuttle services, pedestrian improvements, non-motorized facility planning, land use plans that encourage alternate modes of transportation, clustered developments, and staggered work schedules. Most of these strategies lend themselves to metropolitan areas much larger than Moline. In addition, the existing development within the project corridor limits the potential for significant changes to land use.

3.3 OTHER MODES OF TRANSPORTATION

The Illinois portion of the Quad Cities is served by the Rock Island County Mass Transit District, also known as MetroLINK. The MetroLINK system includes a series of bus routes that link eight Illinois communities. This system serves IL 5, including transfer points at Black Hawk College and Wal-Mart. While ridership on this system has shown an annual growth rate of 2.9 percent (Bi-State Regional Commission, 2002), it has not impacted the increasing congestion and accident levels on IL 5. The Quad City Long Range Transportation Plan (Bi-State Regional Commission, 2002) includes a proposed bicycle and pedestrian trail network. In the project area, a trail is proposed along 27th Street that will connect to the existing trail along the Rock River, south of the corridor. Other opportunities may exist to enhance bicycle and pedestrian accessibility within the local street network within the study corridor. However, IL 5 is not amenable to safely accommodating bicycle or pedestrian traffic. Based on these considerations, use of other transportation modes is not a feasible alternative for addressing the project's purpose and need.

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3.4 NO-BUILD ALTERNATIVE

The no-build alternative includes maintaining the existing state highways and city streets within the study corridor. If the no-build alternative is selected, the existing road system will remain, receiving only routine maintenance and minor improvements. The no-build alternative fails to address the project purpose and need. Congestion along IL 5 would continue to increase, leading to increased travel times and higher accident rates. Level of service would continue to decline at all of the intersections within the corridor, reaching level of service E by 2026. This decline would impact the desirability of the corridor for commercial and retail use, and would negatively impact businesses within the corridor. The no-build alternative is not consistent with the City of Moline's land use plan or the Quad City Area Long Range Transportation Plan.

3.5 CONSTRUCTION ALTERNATIVES

A number of construction alternatives were evaluated for the project. All of the construction alternatives use the existing IL 5 alignment, providing additional capacity through the addition of through lanes and dedicated turn lanes. Deviation in the project alignment is not feasible because of right-of-way constraints and the resulting severe impacts to adjacent retail establishments and residential areas. Because there are no roadways parallel to the south side of IL 5 through the full length of the corridor, IL 5 cannot be converted to a layout with slip ramps to frontage road(s) to allow traffic to access adjacent development from the frontage roads.

Level of Service is used as a rating to indicate the traffic-carrying capabilities of a highway segment. The range of LOS is from A (completely free-flow conditions) to F (forced or breakdown flow). Levels of Service are defined as follows:

- A – Completely free-flow conditions
- B – Free-flow with less room to maneuver
- C – Ability to maneuver within traffic stream is clearly affected
- D – Ability to maneuver is severely restricted due to congestion
- E – Operations at or near capacity, unstable flow
- F – Forced or breakdown flow, demand exceeds capacity.

IDOT's geometric design criteria are based on functional classifications of roadways. Desired LOS for project roadways are:

- IL 5 – Urban Expressway: LOS C
- 41st (N), 53rd (N), 60th (N) – Urban Arterials: LOS C
- 41st (S), 53rd (S), 60th (S) – Urban Collectors: LOS C
- 41st Drive Connector, 38th St (N & S), 38th Ave – Urban Two-way Collector: LOS C
- 41st Avenue Drive, 40th Ave – Urban Local Street: LOS D

3.5.1 Widen to the Inside

The construction of additional lanes inside the existing 40 foot wide median was evaluated. This alternative was dismissed due to the lane shifts required at the intersections for the required turning lanes. In addition, a median barrier would be required through the project study area due to the substandard median width remaining. The remaining narrow median would have only 6.5 ft wide shoulders.

3.5.2 Widen to the Outside

Alternatives for the addition of traffic lanes to the outside of the existing section included both rural and urban cross sections. The urban cross section included the addition of curb and gutter, which would require the design speed to be lowered from 60 mph to no greater than 45 mph. The typical curb and gutter section included a 10-foot shelf on the outside of the curb and gutter for snow storage. The maximum front slope was set at 1:4. Because this section would require almost as much right of way as the rural section while significantly reducing the design speed, it was considered infeasible.

The rural cross section is similar to the existing roadway. A 12-foot wide through lane would be added in each direction. In addition, dual left turn lanes and exclusive right turn lanes would be added to the intersections at 41st, 53rd, and 60th Streets. Improvements at 70th Street would include the extension of the additional eastbound through lane beyond the intersection and the addition of an eastbound turn lane. A weaving lane would be provided on IL 5 westbound from the Interstate 74 exit ramp to the 16th Street exclusive right turn lane. A weaving lane would also be provided on IL 5 eastbound from the Interstate 74 exit ramp to the 38th Street exclusive right turn lane. 41st Street, 53rd Street, 60th Street and 70th Street would be improved at their intersections with IL 5 to include additional turn and through lanes. While this alternative addresses many of the existing roadway deficiencies, it does not provide sufficient capacity at 38th Street. Level of service would continue to decrease at this location. Since the majority of accidents recorded at this high accident location are related to intersection congestion, this alternative would not be expected to reduce accidents at this location. The severe safety and capacity deficiencies at 38th Street are too great to address with simple intersection improvements. Improving the 38th Street intersection with the addition of a through lane in each direction, providing dual left turns and exclusive right turns from IL 5 and providing dual left turn lanes, two through lanes and exclusive right turn lanes on 38th Street results in overall LOS of D with all approaches performing at a LOS of D or worse. As a result, additional alternatives were evaluated to address these issues at the IL 5 and 38th Street intersection.

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3.5.3 Widen with Additional Improvements at 38th Street

Three additional alternatives were evaluated to address safety and capacity issues at the 38th Street intersection with IL 5. One alternative is closing the north leg of 38th Street. The three remaining legs of the intersection would still be signal controlled. This alternative forces all traffic on 38th Avenue (Coaltown Road) to access IL 5 at 41st Street. Shifting the traffic pattern creates a LOS of E at the 38th Avenue (Coaltown Road) and 41st Street intersection. The 3-leg alternate was examined with both an improved intersection and a Single Point Urban Interchange (SPUI) at 41st Street. Both cases would overload the intersection of Coaltown Road and 41st Street and result in a LOS below D. Therefore, all versions of a 3-leg intersection alternative at 38th Street were determined to be infeasible.

A grade separation at 38th Street was evaluated in combination with a Single Point Urban Interchange (SPUI) at 41st Street. IL 5 would be carried over 38th Street and 41st Street. 38th Street would continue to accommodate north-south through traffic and provide access to the Rock River Subdivision shopping plaza to the south. Due to the close proximity of Interstate 74 and ramps and taper length needed for the 41st Street ramps, access to IL 5 would be eliminated on 38th Street. Traffic that normally accesses local businesses and residential properties from IL 5 at 38th Street would be required to use 41st Street along with either 38th Avenue to the north or 44th Avenue to the south. A single point urban interchange would be provided below the IL 5 and 41st Street bridge structure to accommodate 41st Street and IL 5 ramp traffic using traffic signals. Traffic signals and turn lanes would also be required at the intersection of 38th Street and 38th Avenue. This alternative would provide Level of Service of C or better in 2026.

A connector bridge was also evaluated to connect traffic from 38th Avenue (Coaltown Road) and 38th Street south of the existing 38th Street intersection. This bridge would be constructed west of the existing 38th Street intersection and is referred to as the 41st Drive Connector. The intersection of IL 5 with 38th Street would be reconfigured to allow only “right in” and “right out” movements. The median at the 38th Street intersection would be closed to prevent through traffic access across the intersection.

3.5.4 Interchange Alternatives

Interchange Type Studies were conducted for the intersections of IL 5 with 41st Street, 53rd Street and 60th Street. These studies evaluated the feasibility of constructing either a Compressed Diamond or Single Point Urban Interchange (SPUI) at each location. The results of the Interchange Type Studies showed that the SPUI alternative is preferred over the Compressed Diamond Interchange at each location. Based on the existing intersection spacing along IL 5, it was determined that a SPUI could only realistically be implemented at the 41st Street intersection. Additionally, the 41st Street intersection also experiences the highest traffic volumes of the intersections and would benefit the most from the implementation of a SPUI. Although the SPUI is a more costly alternate in comparison to a Compressed Diamond

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Interchange, it provides significant improvements in operations, reduces right of way requirements and results in lower impacts to the surrounding areas.

3.5.5 Proposed Build Alternative

The proposed build alternative is to upgrade the overall roadway from a four-lane expressway to a six-lane expressway using the rural cross section, as described in Section 3.5.2, with a connector road over IL 5 from Coaltown Road to 38th Street. Along IL 5, additional lanes will be constructed on the outside of the existing lanes, maintaining the existing 40' median. To minimize impacts to the existing Interstate 74 ramps, the existing IL 5 median will be narrowed and the lanes shifted to the inside in the immediate area of the two bridges. The 27th Street and Interstate 74 bridges will be replaced and raised to meet minimum vertical clearance requirements of 14'-9" and 16'-9", respectively. The profile on IL 5 will be raised locally to accommodate the increased clearances.

Beginning west of the entrance drive for the funeral home east of 60th St., 38th Avenue will be realigned and reconstructed to shift the roadway to the north and avoid conflict with the wider footprint of IL 5. This section of realigned 38th Avenue includes the funeral home and the entrance to Black Hawk College. East of the Black Hawk College entrance, 38th Avenue will be closed the remaining distance to 70th Street due to conflicts with the proposed IL 5 pavement and the difficulty in shifting the roadway due to the very steep bluff located just north of 38th Avenue. Immediately east of the Black Hawk College entrance, 38th Avenue will be terminated at a "hammerhead" type cul-de-sac. Because the funeral home primarily uses the access point on 70th Street and this access will be removed as part of the improvement, a connection to IL 5 will be provided just east of the funeral home entrance, which will allow Right In/Right Out movements to and from westbound IL 5 only. No access to eastbound IL 5 will be provided at this location.

To improve traffic flow into the Rock River Shopping Plaza that serves two major retailers, Wal-Mart and Lowe's, the access drive at 41st Street will be relocated to the south to 44th Avenue. The relocated frontage road will be connected to the Rock River Shopping Plaza internal roadway network via a new alignment through property currently occupied by the McLaughlin car dealership. Several service bays of the existing dealership will be relocated.

The proposed improvement is shown in Figure 3-1.

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The environmental inventory map (Figure 2-1) identifies all sensitive cultural, natural, physical, and socio-economic resources, and special waste sites in the project corridor. Resources potentially impacted by the proposed build alternative or that require discussion pursuant to applicable laws and regulations are addressed in this Section.

Right of way acquisition for the proposed build alternative has been minimized where practical by the use of retaining walls, embankment slope modifications and storm sewer construction. Most notably, a retaining wall is proposed in conjunction with the proposed noise barrier at Heritage Addition. This retaining wall significantly reduces right of way impacts in the area. An additional retaining wall is proposed east of 53rd Street between John Deere Road and 38th Avenue. This retaining wall eliminates the need to relocate 38th Avenue to the north which would create significant impacts.

The standard 1:6 embankment foreslope has been increased to a 1:4 slope at various sections of the project. Slope modifications have been proposed to keep the construction limits within the existing right of way typically at locations where existing parking lots and access drives have been constructed adjacent to the right of way line. In addition, side road embankment slopes, where curb and gutter is proposed, have been increased to 1:3 at strategic locations.

Storm sewer will be constructed along the north side of IL 5 near the 38th Street intersection and the 60th Street intersection to maintain the existing drainage while keeping the construction limits within the existing right of way. Storm sewer is also proposed at key locations along the side roads.

4.1 SOCIO-ECONOMICS

4.1.1 Community Characteristics

As described in Section 2, the study corridor is predominately commercial. Within the study corridor, two major residential neighborhoods are adjacent to the south side of IL 5; the mobile home park located adjacent to the southeast quadrant of the Interstate 74 interchange and Heritage Addition, located south of IL 5 and east of 48th Street. A large residential area also lies north of IL 5 between 25th and 27th Streets. Large tracts of single and multiple family residences lie to the north of 38th Avenue (Coaltown Road), north of commercial properties along IL 5. Displacements are shown in Figure 4-1. The proposed build alternative will require land acquisition from the north edge of the Heritage Addition and will impact individual homeowners along the north side of 44th Street. No right of way acquisition will be required from the residential area north of IL 5 between 25th and 27th Streets. Two residences will be displaced for reconstruction of the 38th Street/Coaltown Road intersection and three residences will be displaced on the south side of IL 5 for construction of the 41st Drive Connector. No residences will be displaced in the mobile home park.

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The proposed build alternative will result in the construction of an embankment that will serve as a physical barrier between the mobile home park community and the commercial development to the east. The connector will provide improved access to this neighborhood through an improved signalized intersection.

The no action alternative would not directly impact these residential neighborhoods; however, traffic congestion on 38th Street currently limits access to the mobile home park. As traffic on 38th increases, delays for residents leaving the neighborhood will continue to increase. These access limitations will have indirect impacts by reducing the desirability of this housing location.

4.1.2 Title VI and Other Protected Groups

Based on review of the 2000 census data for the census tracts that include the corridor and field observations, the project corridor does not contain identifiable populations of ethnic, racial or religious minorities or elderly or handicapped groups. Therefore, no impacts to Title VI and other protected groups are anticipated as a result of the project.

4.1.3 Environmental Justice

The residential areas in the corridor are racially mixed and household income may vary significantly within the census tracts that include the corridor. The mobile home park may include minority and/or low-income families. However, based on review of the 2000 census data for these census tracts and field observations, the project corridor does not contain identifiable minority or low-income populations. Displacements appear to include a range of housing values. Therefore, no disproportionately high and adverse impacts to minority or low-income populations are anticipated as a result of the project.

4.1.4 Public Facilities & Services

Public facilities within the project corridor include the Church of Christ located north of IL 5, Butterworth Elementary School located south of IL 5 and east of 48th Street, and Heritage Church located on 44th Street. Neither the proposed build alternative nor the no action alternative would directly impact any of these public facilities. Potential noise impacts are discussed under the noise section.

Access for emergency vehicles within the corridor is currently limited by congestion. The proposed build alternative will decrease congestion and reduce emergency response times.

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Under the no-build alternative, congestion will intensify as traffic levels increase, increasing response times for emergency services including fire and ambulance.

4.1.5 Change in Travel Patterns

The proposed build alternative includes construction of the 41st Drive Connector and limiting traffic at the IL 5/38th Street intersection to right in – right out movements. This configuration allows traffic on 38th Avenue (Coaltown Road) to access the retail center south of IL 5 without intersecting IL 5. Residents south of IL 5 between Interstate 74 and 38th Street will have improved access to their neighborhood, but will have to execute a circular pattern to access westbound IL 5. East of 60th St., 38th Avenue will be realigned and reconstructed to shift the roadway to the north and avoid conflict with the wider footprint of IL 5. 38th Avenue will be closed between the Black Hawk College entrance and 70th Street. Immediately east of the Blackhawk College entrance, 38th Avenue will be terminated at a cul-de-sac. A connection to IL 5 will be provided just east of the funeral home entrance, which will allow Right In/Right Out movements to and from westbound IL 5 only. No access to eastbound IL 5 will be provided at this location. This movement may slightly increase travel time for Western Illinois University and Black Hawk College traffic that currently accesses 70th Street from Coaltown Road.

Under the no-build alternative, increasing congestion may increasingly force traffic onto 38th Avenue (Coaltown Road) and other local streets, resulting in increasing congestion and increased crash rates.

4.1.6 Relocations

Table 4-1 summarizes displacements for the proposed build alternative. The proposed build alternative displaces five single-family residences in two locations and two additional outbuildings. Residential displacements are associated with the 41st Drive Connector and are shown in Figure 4-1. Outbuilding displacements are associated with the widening of IL 5 between 41st Street and 53rd Street and consist of garages for residences along 44th Avenue in the Heritage Addition.

Provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act and the *IDOT Land Acquisition Procedures Manual* will be followed for all displacements. Based on review of local newspapers, it is believed that comparable housing is available in the Moline area for displaced residents. The Department will provide housing of last resort, if necessary. Housing resources are available to all relocatees, without discrimination.

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4.1.7 Economics

No businesses will be displaced under any of the project alternatives. The proposed build alternative will require acquisition of right of way from McLaughlin Oldsmobile, an automobile dealership, for relocation of the access drive to the Rock River Shopping Plaza, which includes Lowe's and Wal-Mart (see Figure 3-1 Sheet 2). Land acquisition will impact service bays and parking. These proposed changes have been coordinated with the owners of this business. No other businesses will be directly impacted under the proposed build alternative.

Access to the Rock River Shopping Plaza and other businesses between 38th Street and 41st Street south of IL 5 will be changed under the proposed build alternative. The intersection of IL 5 and 38th Street will become right in/right out only. Access to this area from north of IL 5 will be via the 41st Drive Connector from Coaltown Road (38th Avenue) that will overpass IL 5. These improvements are intended to improve access to this shopping area and reduce congestion and accidents on IL 5, and should result in positive economic impacts to these businesses.

The no-build alternative will result in increasing congestion and delays for traffic bound for commercial areas along IL 5 and will impact the desirability of these locations for retail businesses.

4.1.8 Land Use

Existing and proposed land uses from the Moline Comprehensive Plan are shown in Figures 2-3 and 2-4. The proposed build alternative is consistent with the approved land use plan. The No Action alternative is not consistent with the approved plan. The No Action alternative will not provide increased access or improved safety on IL 5 and intersecting streets and will not contribute to the planned development of this corridor. In the face of increasing congestion on IL 5, commercial businesses may choose to locate in other areas that do not have the infrastructure to support such uses, contributing to urban sprawl and leading to indirect and cumulative impacts to agriculture, wetlands, floodplains and residential areas.

4.1.9 Growth and Economic Development

Continuing economic development in the study area is very closely tied to conditions on IL 5. Vacant lands within the project corridor are limited primarily to agricultural land east of 60th Street that is currently zoned for commercial development. Development of this area, and continued economic viability of existing commercial areas north and south of IL 5, depends on a safe and adequate transportation system. The proposed build alternative would contribute to improved traffic movement and safety and would support the continued economic viability of this commercial center. Since IL 5 is the primary east-west roadway within the corridor,

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increasing congestion and accidents on IL 5 under the no build alternative would compromise the economic viability of this commercial corridor.

4.2 AGRICULTURE

The entire project corridor is within the city limits of Moline and is included in the City's approved land use plan. Therefore, no coordination with the U.S. Department of Agriculture – Natural Resource Conservation Service (NRCS) or the Illinois Department of Agriculture (IDOA) is required.

Most of the project corridor is currently in developed uses. A few agricultural parcels are located east of 60th Street and south of IL 5. Many of these agricultural tracts are currently platted for development or are advertised as for sale for commercial development.

4.3 CULTURAL RESOURCES

The IHPA has concurred that the project will not impact any site subject to protection under Section 106 of the Historic Preservation Act of 1966, as amended. Documentation of that concurrence is included in Appendix A.

4.4 AIR QUALITY

An air quality analysis was performed for the intersection of IL 5 and 41st Street in Moline. The air quality effects of the proposed project were analyzed using the Illinois Carbon Monoxide Screen for Intersection Modeling (COSIM). The "worst case" analysis provided by the COSIM model indicated that the proposed undertaking does not have the potential for contributing to a violation of the National Ambient Air Quality Standard for CO. CO concentrations for the worst case receptor were as follows: Existing (2008) – 5.2 ppm; Build - Time of Completion (TOC) (2012) – 5.1 ppm, TOC + 10 years (2022) – 5.2 ppm, and Design Year (2028) – 5.4 ppm; No Action – 4.9 ppm in TOC (2012), 5.8 ppm in TOC +10 (2022), and 5.2 ppm in the Design Year (2028).

4.4.1 Mobile Source Air Toxics (MSAT)

Mobile Source Air Toxics are discussed in Section 2.4.1. Technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSATs at the project level, it is possible to qualitatively assess the levels of future MSAT emissions under the project. Although a qualitative analysis cannot identify and measure health impacts from MSATs, it can give a basis for identifying and comparing the potential differences among MSAT emissions—if any—from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives*, found at: www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm. For the build alternative, the amount of MSATs emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same under the Build and No Build Alternatives. The VMT estimated for the Build Alternatives is slightly higher than that for the No Build Alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds. According to EPA's MOBILE 6 emissions model, emissions of all of the priority MSATs except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emission decreases will offset VMT-related emission increases cannot be reliably projected due to the inherent deficiencies of technical models. Regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated as part of the project alternatives will have the effect of moving some traffic closer to nearby homes, schools and businesses; therefore, under the Build Alternative, there may be localized areas where ambient concentrations of MSATs could be higher under the Build Alternative than the No Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway section that would be built in the vicinity of 38th St. However, as discussed above, the magnitude and the duration of these potential increases compared to the No Build Alternative cannot be accurately quantified due to the inherent deficiencies of current models.

In summary, when a highway is widened and, as a result, moves closer to receptors, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion

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(which are associated with lower MSAT emissions). Also, MSATs will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

4.5 NOISE

Traffic noise impacts were analyzed for the existing condition, no-build, and proposed build alternative. Detailed information on the noise study is provided in the Noise Technical Report. This section summarizes the project noise analysis.

Regulations require consideration of abatement when the levels approach the NAC. IDOT considers "within 1 decibel of" as approaching the noise level, thus the numerical values used for the hourly value of the equivalent, steady-state sound level [Leq(h)] for Land Use Categories A, B, C, and E are 56, 66, 71, and 51 dBA, respectively. It should be noted that the NAC are noise impact thresholds, and are not attenuation design criteria.

Existing land use within the project corridor is described in Chapter 2 and is dominated by commercial and residential uses. Planned future land use includes conversion of all of the vacant and agricultural land east of 60th Street to 70th Street to a business park. Plans for a Planned Urban Development at that location (Valley View Village) were recently filed with the City of Moline. The proposed development includes residential parcels near the southern limits. Areas of potential traffic noise impact related to the proposed improvements were identified based on current and future land uses in proximity to the project. Noise study areas or noise sensitive areas (NSAs) were identified that comprise groupings of receivers that are of similar land use, represent a common general location, and might be considered as a group if abatement appeared to be warranted. Specific locations were selected for use in predictions of existing and projected noise levels. These locations were positioned to represent the conditions expected in the NSA, and may represent a single receptor or a grouping (see Figure 4-2).

Table 4-2 lists receiver identification numbers, the NSA, the receiver type, the number of represented dwelling units, the location relative to IL 5, and an abbreviated description of location. The receiver types consist of single-family residence, multi-family residence, church, cemetery, school and monitoring location. The column labeled "Represented Dwelling Units" generally indicates the number of residential units assigned to that receiver for later use in evaluating the economic feasibility of abatement measures.

Traffic noise levels were modeled for the existing condition, no-build, and proposed build improvement alternatives using the Federal Highway Administrations Traffic Noise Model Version 2.5 (TNM 2.5). The results of the noise modeling are summarized in Table 4-3.

The no-build alternative uses existing roadway geometry with projected traffic increases. Results are presented in Table 4-3. The proposed build alternative is described in Section 3. The

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Leq values for this scenario (without barriers) are also presented in Table 4-3. Receivers where the NAC are approached, met or exceeded for the build alternative are in bold type. These receiver locations are highlighted in Figure 4-2.

Based on the modeling results summarized in Table 4-3, the NAC for traffic noise level were approached, met or exceeded at multiple locations in 13 of the 17 NSAs. NSAs 1, 2, 3, 5, 6, 7, 8, 9, 10, 12, 13, 14, and 15 include one or more receiver point locations where the predicted traffic noise level exceeds the NAC. Noise abatement was considered as part of the project improvements at these locations. Alternatives to abate noise levels include reductions in noise level emissions as well as interventions with barriers or other measures. Reductions can sometimes be achieved by limiting or reducing traffic volumes and speed, restricting higher energy sources such as heavy trucks, and prohibitions of heavier vehicles from late afternoon to mid-morning. These techniques are not feasible for IL 5. Therefore, noise barriers were evaluated to reduce the noise levels at these receptor locations.

Predicted noise levels must be reduced by at least 8 dBA for an abatement measure to be considered effective. Factors to be considered for the potential placement of noise barriers include safety, engineering and cost. Safety considerations include reduced visibility for motorists and pedestrians on roadways and access drives, the potential for crashes into the barrier, etc. Engineering considerations, besides safety considerations, include potential complications related to right-of-way limits, drainage, property exterior access, utility constraints, and snow removal. Cost is also a consideration, and current policy requires that barrier cost be less than \$24,000 per benefited unit. Current policy also specifies barrier design be based on ground level receptors. These factors have been used to evaluate where barriers are reasonable and feasible for the IL 5 project.

Barriers were considered at each of the locations where the NAC were met or exceeded. Barriers were determined to be infeasible based on potential noise reduction, safety, access, and/or cost at all but two of the locations that exceeded the NAC. Barriers were determined to be feasible at the mobile home complex adjacent to Interstate 74 and at Butterworth School and the Heritage Addition.

NSA 12 is the mobile home complex. All of the modeled receiver locations in the row of homes nearest IL 5 exceeded the NAC for the build alternative. The increase over existing levels was generally less than 2 dBA. The calculated length of the barrier is about 1,275 ft, and the average height is about 16.6 ft. The height along IL 5 is uniform at 17 ft. In the easternmost 106 ft, the height decreases from 17 to 5 ft as the ground surface rises with the proposed embankment slope. The barrier achieves the 8 dBA reduction goal for most of the receiver locations that were approaching, at or over the NAC, as well as achieving the 5 dBA criterion for benefited units at multiple receiver locations. The total number of benefited units represented by these receivers is 29, and the approximate cost per benefited unit is \$18,202.

The current land use in NSA 12 is residential and the current comprehensive land use plan identifies the future use of this NSA as medium density residential. Based on these considerations, a noise barrier is recommended at this location.

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A detailed barrier analysis was conducted for the area including Butterworth School and the Heritage Addition (NSA 14). The calculated length of the barrier is 2,773 ft, and the height is uniformly 20 ft. The barrier achieves the 8 dBA reduction goal for all of the receiver locations that were approaching or over the NAC, as well as achieving the 5 dBA criterion for benefited units at numerous other receiver locations. The total number of benefited units represented by these receivers is 73, and the approximate cost per benefited unit is \$18,992.

The barrier turns southward away from the present right-of-way at the east end of the barrier. Extending the wall eastward was not effective in protecting the receiver locations at the east end of the Heritage Addition. Turning the east end of the barrier southward was the most effective and feasible solution. Also, continuing the barrier eastward with marginal benefit has the negative effect of blocking visibility to the commercial service station at the east end of the Heritage Addition. Coordination with the affected property owners to accommodate this off right-of-way use has been completed.

Land use in this area is not expected to change. Residents of the Heritage Addition have indicated that they favor noise barriers. Based on these considerations, a noise barrier is recommended at this location.

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4.5.1 Construction Noise

Trucks, heavy machinery and other equipment used during construction will produce noise which may affect some land uses and activities. Specifications in Article 107.35 of the IDOT Standard Specifications for Road and Bridge Construction require all construction machinery to be equipped with adequate, properly maintained mufflers in constant use and limit all construction within 1,000 ft of an occupied residence, motel, hospital or similar receptor to the period between 7:00 a.m. and 10:00 p.m.

4.6 ENERGY

Construction of the proposed IL 5 improvements will require indirect consumption of energy for processing materials, construction activities, and maintenance for the lanes along the 3.5 miles to be added within the project limits. Energy consumption by vehicles in the area may increase during construction due to possible traffic delays.

Construction of the proposed improvement will reduce traffic congestion and turning conflicts along the route and thereby reduce vehicular stopping and slowing conditions. Additional benefits would be realized from increased capacity and smoother riding surfaces. This will result in less direct and indirect vehicular operational energy consumption for the build alternative than for the no-action alternative. Thus, in the long term, post-construction operational energy requirements should offset construction and maintenance energy requirements and result in a net savings in energy usage.

4.7 NATURAL RESOURCES

Most of the project corridor is in developed urban uses and provides very limited biological habitat. Habitat is generally limited to highly modified streams and wetlands and vacant lots. These areas provide habitat for species that are tolerant of human presence and disturbance. None of the project alternatives will impact any known or potential habitat for any species listed as threatened or endangered by the State of Illinois or the U.S. Fish and Wildlife Service.

The proposed build alternative will impact a total of 2.6 acres of scrub-shrub and woodland cover in 9 locations. A total of 290 trees, including landscape trees, will be removed for project construction. The greatest impact (1.7 acres) occurs as a result of construction of the 41st Drive Connector south of IL 5. The impacted area is dominated by small trees and shrubs including box elder, silver maple and green ash. None of the wooded areas that would be

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impacted for construction of the proposed build alternative is part of a large, contiguous forested tract that could potentially provide habitat for interior species of songbirds.

The project will also impact 2.23 acres of wetlands, which are described in more detail in Section 4.10. Areas of natural cover (grassland, wetland, scrub-shrub, woodland) within the right of way will be converted to pavement and maintained grassland, which provides very limited habitat.

The proposed build alternative will impact 178 linear feet of surface water channel within three, small, unnamed tributaries of the Rock River. These stream channels are all highly disturbed and provide limited aquatic habitat for disturbance-tolerant species. Habitat within these channels will be eliminated through enclosure of the channels with culverts.

The Illinois Department of Natural Resources reviewed the project and terminated consultation on January 23, 2002. The completed Endangered Species Consultation Program Agency Action Report is included in Appendix A.

4.8 WATER QUALITY

4.8.1 Operations

Increased motor vehicle traffic can increase pollutant levels reaching surface water resources. Pollutants associated with motor vehicles include tire filler, motor oils, metals associated with engine wear, petroleum compounds from lubricants, hydraulic fluids, and fuels. The FHWA has shown that runoff from rural highways with traffic volumes less than 30,000 vehicles per day (Average Daily Traffic, or ADT) exerts minimal impacts on aquatic biota and the physical components of the stream (Young et al., 1996). However, IL 5 currently exceeds 30,000 ADT with traffic volumes predicted to increase over the next 20 years. Studies have shown that pollutant loadings from paved roadways correlate poorly with ADT; however storm intensity and duration play a major role in the types and quantities of pollutants from paved surfaces (Young et al., 1996). Intensive research has shown that pollutants associated with a paved surface are quickly washed off during the beginning of a storm. The first flush phenomenon estimates that 90 percent of the annual stormwater pollutants are transported in the first one-half inch of rain (Center for Watershed Protection, 1994). Regular cleaning will minimize impacts to water quality from highway runoff.

Winter applications of deicing salts can impact water quality in receiving streams. According to the Illinois Department of Transportation, an average of 690 pounds of deicing salt was applied per lane mile per storm event to State-maintained highways in the Moline area during the winter of 2003/2004. The maximum discharge of chlorides from deicing applications to streams within the project corridor was estimated based on a method developed by Ames (1977). This analysis assumes that all of the salt applied to the highway is transported to the

stream and does not account for attenuation by roadside vegetation or transport outside of the watershed by vehicles and therefore represents a worst case estimate of chloride loading from the project pavement surfaces. The analysis does not account for loading from other sources within the watershed. The assumptions for and results of the analysis are summarized in Table 4-4.

Based on this analysis, the maximum projected chloride concentration in the receiving stream from roadway deicing salt applications to IL 5 within the project limits is approximately 12.2 mg/L. This concentration is well below the Illinois General Use Water Quality Standard of 500 mg/L. The annual loading rate to the Rock River from the proposed build alternative is 321 tons.

4.8.2 Construction

It is anticipated this project will result in the disturbance of more than one acre of total land area. Accordingly, it is subject to the requirement for a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges from the construction sites. Permit coverage for the project will be obtained either under the IEPA General Permit for Stormwater Discharges from Construction Site Activities (NPDES Permit Number ILR10) or under an individual NPDES permit. Requirements applicable to such a permit will be followed, including the preparation of a Stormwater Pollution Prevention Plan. Such a plan shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges from the construction site and shall describe and ensure the implementation of practices which will be used to reduce the pollutants in discharges associated with construction site activity and to assure compliance with the terms of the permit.

4.9 FLOOD PLAINS

Flood plain impacts are shown in Table 4-1. These impacts are based on the FEMA mapping for the project area. The proposed build alternative impacts 8.1 acres in four locations within the 100 year flood plain. All of the proposed encroachments are transverse. None of the areas impacted are within the regulatory floodway. Proposed activities within the flood plain include extension and replacement of culverts along IL 5 and construction on new alignment for the 41st Drive Connector. Proposed drainage structures will have effective waterway openings equal to or greater than existing structures, and backwater surface elevations are not expected to increase. New drainage structures for the Connector are designed to result in minimal increase in flood heights or flood limits. These minimal increases will not result in any significant change in flood risks or damage; and they do not have significant potential for interruption or termination of emergency service or emergency evacuation routes; therefore, it has been determined that this encroachment is not significant.

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4.10 WETLANDS

IDOT construction projects reflect the State of Illinois goal of no overall net loss of wetlands. IDOT must meet Federal requirements for avoiding and minimizing the loss of wetlands, and must also meet the requirements of the State Interagency Wetland Policy Act of 1989. This act implemented the State Wetland Mitigation Policy, which directs that state agencies preserve, enhance, and create wetlands where possible and avoid adverse impacts to wetlands from construction. If no feasible alternatives exist and adverse wetland impacts are unavoidable, then the loss of wetlands must be compensated.

Wetland impacts are shown in Table 4-5. Wetland impacts cannot be avoided because the project is on existing alignment and most of these wetland sites are adjacent to the roadway. The majority of the wetland impacts from the proposed build alternative are from construction of the 41st Drive Connector. This alignment accounts for 1.9 acres of the total 2.23 acres of project wetland impacts. The connector cannot be placed in a different location without significant additional commercial and residential displacements. Eliminating the Connector from the proposed build alternative results in a Level of Service of less than C at 38th Street and does not fulfill the project purpose and need. Wetland impacts have been minimized to the extent practicable within the IDOT design standards.

Wetland impacts have been coordinated with the NEPA/404 Merger Process agencies. Signatory agencies agreed on January 7, 2009 that the project was not of sufficient complexity to warrant processing through the NEPA/404 Merger Process.

Based upon the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

An Individual 404 permit will be required for impacts to wetlands from the proposed build alternative. The wetland mitigation plan must be approved by the U.S. Army Corps of Engineers and the Illinois Department of Natural Resources. IDOT currently plans to mitigate for wetland losses from this project by adding 3.35 acres of forested wetland to the Green River Wetland Mitigation Site (for the Milan Beltway Extension Project) located north of Interstate 280 and east of Mosquito Creek.

4.11 SPECIAL WASTE

The USEPA listing of potential, suspected, and known hazardous waste or hazardous substance sites in Illinois (i.e., the Comprehensive Environmental Response Compensation and Liability Information System [CERCLIS] list) has been reviewed to ascertain whether the proposed project will involve any listed site(s). As a result of this review, it has been determined that the proposed undertaking will not require right-of-way from a site included in the CERCLIS listing as of October 15, 2001.

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A Preliminary Environmental Site Assessment (PESA) for special waste was conducted by the Illinois State Geological Survey in May 2002. The assessment concluded that the build alternative could involve sites potentially impacted with regulated substances. Further, it has been determined that four of these sites cannot be avoided. The sites that cannot be avoided include PESA Site numbers 1350-3, 1350-4, 1350-5, and 1350-6. These sites involve potential petroleum contamination from underground storage tanks. Additional investigations will be required at these locations to determine the nature and extent of contamination. Contaminated soils removed during construction will be managed and disposed of in accordance with applicable Federal and State laws and regulations and in a manner that will protect human health and the environment. The quantities to be disposed of are not expected to have a significant effect on landfill capacity.

In addition, the PESA noted the presence of structures that were constructed prior to 1979 and may contain asbestos-containing materials.

4.12 SPECIAL LANDS

No 4(f) or 6(f) lands will be impacted under any of the project alternatives.

4.13 COORDINATION AND PUBLIC INVOLVEMENT

The project planning process has included coordination with the City of Moline and potentially affected businesses and residents. The public involvement process has also included a public informational meeting and a series of newsletters to keep interested members of the public informed about the progress of the project.

The public informational meeting was held on July 22, 2004 at the Holiday Inn in Moline, Illinois. The purpose of the meeting was to provide project information and receive comments on the project from the public. Exhibits of the project corridor and preliminary alternatives were displayed. In addition, a Power Point presentation was shown every 15 minutes throughout the meeting. Representatives of the Illinois Department of Transportation and the consultants were available to answer questions and discuss comments. Land acquisition specialists from the Department of Transportation were also available to provide general information on relocation assistance. Attendees were provided a project information sheet and encouraged to provide written comments. Most citizens who submitted comment forms reside in the project area. The comments received were strongly in favor of a construction alternative that would reduce congestion and accidents on IL 5. Most of the property owners who submitted comments prefer an alternative that would not require acquisition of residential property.

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Residents on 44th Avenue were generally opposed to relocation. Some residents also expressed concern about additional traffic through residential neighborhoods during construction.

A Public Hearing will be held prior to a final decision on the project.

Documentation of the public involvement process is available in the Public Involvement Record prepared for this project.

4.14 PERMITS

Permits will be required for construction of the proposed build alternative. An Individual Permit will be required from the US Army Corps of Engineers under Section 404 of the Clean Water Act for impacts to wetlands and Waters of the United States. In addition, water quality certification will be required from the Illinois Environmental Protection Agency under Section 401 of the Clean Water Act.

The box culvert west of 70th St. will be replaced as part of the proposed build alternative. This culvert will require a Nationwide Permit Number 14. The IEPA has issued certification for this nationwide permit.

It is anticipated this project will result in the disturbance of one or more acres of total land area. Therefore, a National Pollutant Discharge Elimination System (NPDES) permit will be required for stormwater discharges from the construction sites. Permit coverage for the project will be obtained either under the IEPA General Permit for Stormwater Discharges from Construction Site Activities (NPDES Permit Number ILR10) or under an individual NPDES permit.

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4.15 COMMITMENTS

The Department has made commitments regarding mitigation of impacts from the proposed build alternative. These commitments include:

- Construction of a noise barrier to protect the mobile home community located adjacent to Interstate 74 and south of John Deere Road
- Construction of a noise barrier to protect impacted receivers within the Heritage Addition and Butterworth School
- Replacement of trees removed by the project in accordance with IDOT Standard Specifications for Road and Bridge Construction
- Mitigation of wetland impacts by construction of 3.35 acres of forested wetland off-site at the Green Rock Mitigation Site.